OCEAN EXPERT EXCHANGE EDUCATOR RESOURCES

TOPIC – ***Climate Monitoring & Coral Bleaching in the Florida Keys***

FEATURED EXPERT – ***Nicole Besemer of the National Oceanic and Atmospheric Administration***

RELATED LEARNING STANDARDS

OCEAN LITERACY PRINCIPLES - Principle #5: The ocean supports a great diversity of life and ecosystems.
Principle #6: The ocean and humans are inextricably interconnected.

NEXT GENERATION SUNSHINE STATE STANDARDS -

SC.4.L.17.4: Recognize ways plants and animals, including humans, can impact the environment.
SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
SC.6.N.1.5: Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence.
SC.7.N.1.5: Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.
SC.8.N.4.2: Explain how political, social, and economic concerns can affect science, and vice versa.
SC.912.N.1.1: Define a problem based on a specific body of knowledge; pose questions, conduct systematic observations, examine books and other sources of information to see what is already known…
SC.912.L.17.4: Describe changes in ecosystems resulting from seasonal variations, climate change and succession.
SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.
SC.912.L.17.16: Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gasses, ozone depletion, and surface and groundwater pollution.
SC.912.L.17.17: Assess the effectiveness of innovative methods of protecting the environment.

SUPPLEMENTAL RESOURCES

- Reading - ANGARI Foundation Meet Nicole Besemer (Grades 5-12)
- Video Short – ANGARI Monitoring Reefs in the Dry Tortugas | NOAA & CIMAS | Exp 39 (Grades 6-12)
- Video Short – NOAA AOML Dry Tortugas Field Journal (Grades 5-12)
- 3D Model – NOAA Coral Reef Conservation Program Coral Polyp / Bleaching Model (Grades K-12)
- Reading – ScienceNewsExplores Summer 2023 is when the ocean first turned 'hot tub' hot (Grades 5-12)
- Reading/Podcast – Short Wave Why 'it is absolutely not too late' for Florida's coral reefs (Grades 7-12)
- Resource Library – NOAA Investigating Coral Bleaching: Teachers Resources (Grades 6-8)
- Lessons – Southeast Florida Coral Reef Initiative Florida's Coral Reef Lessons and Activities (Grades K-12)
- Lesson – CalAcademy Coral Bleaching: Talking about Climate Change & Sustainable Solutions (Grades 3-6)
- Lesson – National Park Service Coral Bleaching: Turning Up The Heat (Grades 6-8)
- Lesson – Encounter Edu Coral Bleaching (Grades 7-11)
- Video Short & Lesson – PBS LearningMedia Coral Bleaching | HHMI BioInteractive (Grades 9-12)
- Lessons – Oregon Marine Scientist and Educator Alliance Coral Bleaching (Grades 9-12)
- Resource Library – NOAA National Marine Sanctuaries Coral Reef Ecosystems (Grades K-12)
- Resource Library – MBARI Why are Coral Reefs so Stressed Out? (Grades 5-12)
- Reading – Frontiers for Young Minds How Marine Heatwaves Impact Life in the Ocean (Grades 4-12)
- Reading – Science Journal for Kids and Teens How can nanoparticles help coral reefs? (Grades 7-10)
- Reading – ScienceNewsExplores Shading corals during midday heat can limit bleaching (Grades 5-12)